

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application.

1 1. (previously presented) A method of scheduling operations for logical volumes in a  
2 data storage system comprising:  
3 determining, for a plurality of priority classes, which operations associated  
4 with each of the priority classes in the plurality of priority classes have been requested for  
5 a logical volume; and  
6 selecting one of the operations by performing a probability-based operations  
7 lookup based on the determination.

1 2. (previously presented) The method of claim 1, wherein the probability-based  
2 operations lookup comprises using a table of entries corresponding to different operations,  
3 further comprising:  
4 forming a plurality of first selection values, one corresponding to each of the  
5 priority classes in the plurality of priority classes, based on the determination;  
6 selecting one of the priority classes in the plurality of priority classes based on  
7 the determination; and  
8 selecting a corresponding one of the plurality of first selection values  
9 corresponding to the selected one of the plurality of priority classes as a lookup index  
10 pointing to one of the entries.

1 3. (Currently Amended) The method of claim 2, wherein the probability-based  
2 operations lookup comprises a first lookup level corresponding to a probability-based  
3 priority class lookup and a second lookup level corresponding to the probability-based

4 operations lookup, and wherein selecting one of the priority classes in the plurality of  
5 priority classes comprises:  
6 deriving a second selection value from the first selection values; and  
7 using the second selection value as a first lookup index at the first lookup  
8 level and using the selected one of the first selection values as ~~an~~ a second lookup index  
9 at the second lookup level.

1 4. (cancelled)

1 5. (cancelled)

1 6. (cancelled)

1 7. (cancelled)

1 8. (cancelled)

1 9. (cancelled)

1 10. (cancelled)

1 11. (cancelled)

1 12. (previously presented) An apparatus for scheduling operations for logical volumes in  
2 a data storage system, comprising:

3 a stored computer program in memory instituting the steps of

4 determining, for a plurality of priority classes, which operations associated  
5 with each of the priority classes in the plurality of priority classes have been requested for  
6 a logical volume; and

7 selecting one of the operations by performing a probability-based operations  
8 lookup based on the determination.

1 13. (cancelled)

1 14. (cancelled)

1 15. (cancelled)

1 16. (cancelled)

1 17. (cancelled)

1 18. (cancelled)

1 19. (cancelled)

1 20. (cancelled)

1 21. (New) A data storage system comprising:

2 one or more storage devices;

3 a controller to control scheduling of operations for a logical volume residing  
4 on at least one of the one or more storage devices; and

5 wherein the controller is operable to determine, for a plurality of priority  
6 classes, which operations associated with each of the priority classes in the plurality of  
7 priority classes are pending and select one of the operations by performing a probability-  
8 based operations lookup based on the determination.

1 22. (New) A method of scheduling requested operations for a logical volume in a  
2 data storage system comprising:

3 determining which requested operations are associated with each of a plurality of  
4 priority classes;

5 selecting one of the plurality of priority classes by performing a first probability-  
6 based lookup; and

7 selecting one of the requested operations for scheduling by performing a second  
8 probability-based lookup, wherein the selected operation is associated with the selected  
9 priority class.